NOAA Sea Grant
Science Serving America's Coasts

Rapid Response
Hurricane Isabel: South Carolina and Florida Sea Grant researchers collaborated on the design and deployment of four portable 10 meter wind towers that were used to record wind speed and barometric pressure at ground level. For the first time ever, detailed coastal tower wind data were transmitted in real-time from the field to NOAA's National Hurricane Center during Hurricane Isabel. These high quality observations constitute the highest wind speed for which continuous, high frequency, digital observations have been recorded in a U.S. landfalling hurricane, which is a valuable contribution to hurricane research.

Education and Outreach
Hanauma Bay Nature Preserve: Hawaii Sea Grant has been conducting educational programs at the Hanauma Bay Nature Preserve for more than a decade. Located in southeast Oahu, it is one of the most heavily used marine preserves in the world, drawing over one million visitors per year. Hawaii Sea Grant enlists over 100 volunteers to provide visitors with information aimed at mitigating environmental damage and enhancing their knowledge of coral reef ecology. Last year, in partnership with the City and County of Honolulu, a new state-of-the-art $13 million Marine Education Center at Hanauma Bay was opened. All visitors are now required to take "reef etiquette" training. This education effort is producing observable changes in the ways visitors use Hanauma Bay, and is instilling a new sense of coral reef stewardship.

Education and Outreach/Partnerships
Centers for Ocean Science Education Excellence: NOAA Sea Grant has been at the nexus of a major initiative in marine education in cooperation with the National Science Foundation (NSF). This initiative, called the Centers for Ocean Science Education Excellence (COSEE), seeks to increase and enhance collaboration and communications among ocean scientists, educators and the general public. Working with NSF and other NOAA programs, the National Sea Grant Office has played an integral role in conceptualizing and realizing the COSEE vision and is a partner with CORE on the central coordinating office. The seven COSEE centers around the U.S. (five of which are partnered with Sea Grant programs) are working to facilitate the integration of research into high-quality educational activities, programs and materials in order to engage students and their teachers, and develop their interest into a mature understanding of the relevance of the oceans to their lives.

Partnerships
EPA/NOAA "Smart Growth": Over the past several months, under the auspices of the NOAA Sea Grant Coastal Communities and Economies Theme Team, representatives from NOAA, the National Sea Grant Office (NSGO) and the Sea Grant network have met with managers and staff at EPA's Office's of Wetlands, Oceans and Watersheds and Policy, Economics and Innovation to discuss mutual interests in coastal community development. EPA is interested in developing relationships with Sea Grant extension specialists associated with the coastal community development (CCD) program for the purpose of enhancing education and training opportunities

to local decision-makers. Significant partnership opportunities are available by coupling EPA's national smart growth expertise and resources with Sea Grant's locally based extension and education infrastructure. To initiate the partnership, EPA is making available an in-depth training opportunity to be held November 3-7, 2003 in Washington, DC. The workshop will provide basic smart growth information, educate Sea Grant CCD specialists on smart growth project planning, and assist participants in drafting a work plan that directly seeks to implement some aspect of smart growth in their community. EPA will provide a small amount of seed funding for each Sea Grant program to implement the work plans generated at the training session.

Nonpoint Education for Municipal Officials (NEMO): Several NOAA programs have shown increasing interest in utilizing the NEMO network (a confederation of 27 programs in 26 states that educate local land use decision makers about the links between land use and natural resource protection) to achieve NOAA coastal environmental health goals. Staff representing these programs in NOS and OAR (CPD, CSC, NERRS and the NSGO) have met to coordinate existing and plan new activities related to NEMO. Through our Extension Program, Sea Gant supports NEMO activities in approximately half of all coastal states. In addition, numerous Sea Grant research projects provide the science which forms the basis for building science-based extension education programs. Sea Grant investments in water quality and watershed management programs have grown significantly in recent years. Recently, Sea Grant initiated the $1.5 million per year coastal community development (CCD) program in order to enhance NEMO-like activities in all 30 Sea Grant programs. In partnership with NASA, Sea Grant has also agreed to fund a full time technical specialist to be located at NEMO offices at the University of Connecticut for the purpose of providing NASA geospatial information to NEMO and CCD extension specialists.

NWS/NOAA Sea Grant Rip Current Task Force: In a new multiagency collaboration, NOAA's National Sea Grant College Program, the National Weather Service (NWS) and the U.S. Lifesaving Association (USLA) have partnered to leverage the expertise and resources of each organization to address the dangers of rip currents; develop a unified and consistent public education message and campaign; and, increase the dialogue among local beach patrols, coastal NWS forecast offices and Sea Grant Universities. Through local partnerships, NOAA's NWS and Sea Grant have already established rip current education and awareness programs and public information campaigns in many coastal states. Lessons learned through the success of these projects, especially those in Florida and North Carolina, have been used as springboards for new Sea Grant outreach efforts in many locations, including Delaware, and for the national partnership. The task force is developing a NOAA-level rip current brochure and poster with the USLA. The participants are planning a May 2004 national-level press conference, in conjunction with National Beach Safety Week, to publicly acknowledge the partnership and to advertise the first-ever NOAA-level rip current brochure and poster. The task force will encourage increased dialogue among the nation's weather forecasting offices, state Sea Grant Universities and lifesavers, and will lead a unified public education campaign to inform the public of the rip current threat and of sources for information.

Open Ocean Aquaculture

Groundbreaking Research and Innovative Investment Address Our Nation's Demand for

Seafood: Through its investment in offshore aquaculture, NOAA Sea Grant hopes to establish an environmentally sustainable, profitable offshore aquaculture industry in the U.S. and the Caribbean that will alleviate stress on natural stocks, create jobs and address our nation's trade deficit. NOAA Sea Grant investments have helped establish scores of new businesses throughout the nation and provided technologies to these businesses. In addition, NOAA Sea Grant's offshore projects in Florida/Puerto Rico, Hawaii, New Hampshire, the Gulf and the mid-Atlantic use indigenous species from unmodified genetic stock to insure no introduction of non-native species and to reduce genetic impacts on natural stocks. In Hawaii, production trials have resulted in 50 tons of product at market size in eight months and production is now at the level of 6,000 pounds a week. Four to five new commercial applications are pending for offshore leases as a result of this success. In Puerto Rico, survival rates for snapper and cobia are nearly 100 percent. Both species have enjoyed extraordinary growth rates (10-20 lbs. in one year for cobia). New Hampshire initiated the first U.S. cage production of Atlantic halibut, cod and haddock in an offshore environment. This project is also utilizing longline technology to culture shellfish. As a result of investments such as these, marine aquaculture is widely predicted to be a significant global industry for food production.

Biotechnology Research

As one of the nation's leading supporters of high-risk, early-stage drug discovery research, Sea Grant has repeatedly demonstrated the value of marine organisms as sources of new anti-cancer, anti-inflammatory and anti-microbial compounds. From 1998 to 2003, California Sea Grant alone has 18 patents that range from the use of debromohymenialdisine for treating osteoarthritis to anti-inflammatory uses of manzamines (both isolated from marine sponges.) Specifically, Sea Grant researcher William Fenical of Scripps Institution of Oceanography discovered a set of novel peptides, called halovirs, from a marine-derived fungus which suppress replication of the herpes virus in mammalian cells. A patent has been filed on the discovery and San Diago-based Nereus Pharmaceuticals has sought licensing rights.